AN INITIAL FRAMEWORK FOR ENHANCING CULTURAL COMPETENCY

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THE SCIENCE OF CULTURAL READINESS

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The following represents the deliverable concerning an initial framework for the cultural research program. This work is submitted to DEOMI through HRT, Inc.

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Preamble

Within the last two decades, we have seen as great a change in the nature of warfare and conflict as has been experienced in all of the previous millennium. Military commanders of the 1960's had as much if not more in common with generals such as *Arminius* and *Publius Quinctilius Varus*[1] as they do with their modern-day counterparts. The demise of the superpower stand-off and the diminution of importance of the physical environment, in terms of both possession and site of conflict, has left our forces to operate in conditions for which their previous training has provided relatively little guidance and direction. However, in general our forces have been facile in understanding and adapting to the changes that these new circumstances have thrust upon them (Merlo, Szalma, & Hancock, 2007; Scales, 2006). With the hallmark of the professionalism that characterizes these Institutions, they have sought to understand these new demands and look to provide answers to the inherent problems now posed (Chiarelli & Smith, 2007).

Current operations frequently feature armed conflict within a broken, urban terrain. Intrinsic to the notion of an embedded insurgency

[1] Arminius and Publius *Quinctilius Varus* were the two respective generals who faced each other at the Battle of the Teutoberg Forest in 9AD.. Arminius, the leader of the temporarily unified Germanic tribes, and who had previously been trained by the Roman Army itself, defeated three legions with a surprise and orchestrated attack which took extensive advantage of an understanding of Roman military procedure. Like the high-water mark at Gettysburg, the Roman Empire, although it lasted another 400 years, never made further established inroads into this area of upper Europe. It can truly be said that this Empire was attacked from inside, from whence the dissolution of all Empires proceed. It was said afterwards that the Emperor Augustus would sometimes rage around his Palace yelling: "*Publius Quncitilius Varus – give me back my legions!"* Of course, he could not and eventually, having shown this least glimpse of vulnerability, the Roman Empire fell. It did, however, last longer than the '*thousand year Reich*."

is the inter-mixing of hostile forces with the indigenous population. This creates a fuzzy war and fuzzy points of conflict since it is often the case that the enemy cannot be identified unequivocally. Inherently, this is a signal detection task in which the job of military personnel on the ground is to try to distinguish opposition forces from non-combatants, often in the midst of highly stressful, engagements. In signal detection terms, a "miss" in this context leaves a squad of dead soldiers, while a "false alarm" results in casualties and fatalities to the resident population. This dilemma, known in signal detection terms as 'setting Beta' is what forces mean by the invidious choice of being "carried by six, or judged by twelve." Indigenous individuals are thus cast into a paradoxical role, such that they may well be the enemy and yet at the same time, they might be the greatest source of immediate information which may be used to help resolve whatever conflict pertains. This dualistic aspect of local personnel can cause great stress, uncertainty, and ambiguity in both the exposed population and in the soldier themselves, looking to accomplish their required mission.

In life, as in formal information theory, information reduces uncertainty (Shannon & Weaver, 1949). In the present example, information is culturally bound and thus culturally locked. As a result, the answer that the military individual requires may be literally staring them in the face but because it is coded within another culture it is essentially camouflaged and thus unavailable for use. In order that military personnel be better armed to access this vital information and are thus able to use it to enhance their probability of mission success, we need a science of cultural readiness. In this we need to identify and distill methods of measurement and assessment which allow us to capture and disseminate culturally-contingent information. It is to this end that the current program of research is directed and the present framework is presented

1. In the Mirror of Culture

"Culture: A cohesive collection of consciousness."

Consciousness: A Culturally contingent awareness"

1.1. Introduction

We view our world through the lens of culture. Culture acts to fashion and create the very reality we experience (Lehman, Chiu, & Schaller, 2004). In the same way that the early empiricists emphasized the primacy and inevitability of sensory experience, so the perceptions that are derived from these elementary sense data are inevitably strained through the filter of cultural comprehension. In the same way that there is no unique "*privileged*" observer in the physical universe (Hancock, 2005), so there is no unique "*acultura*l" observer in human society. Thus, the initial point of departure for any examination of the effects of culture on perceptions, attitudes, and actions must begin with a brief examination of one's own initial cultural framework and its associated assumptions. In this respect, and indeed an early aphorism from our Greek forebears asks us first to "*know thyself*." [2]

We approach our world with a modern, European-based perspective, largely framed in modern times through the advances of the Renaissance and subsequently the Enlightenment. The latter brisance of human understanding had a radical effect on the founding of our country through the agency of Thomas Jefferson as well as a number of other framers of the U.S. Constitution. *It is absolutely essential that we seek to*

[2] The Greek phrase for know thyself is γνῶθι σεαυτόν and it was inscribed at the Temple of Apollo at Delphi. It has been attributed to any number of early sages including Socrates and Pythagoras however, these may well be simply spurious references.

understand on all levels of comprehension that many (if not most) other human cultures do not share these crucial assumptions about the way the world is or can be organized. Thus, our initial platform of understanding must examine how the various confluences of culture lead to clashes of understanding about even very basic human activities such as warfare itself (see Hancock, 1999).

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1.2. The Evolution of Culture

In large part, cultural differences arise from spatio-temporal separation. That is, in a modern world in which immediate electronic communications and round the clock operations predominate, it is the very nature of technology itself that acts to dissolve the respective boundaries between cultures. It is as reasonable now to talk about a cross-national MTV culture as it is to focus on the palimpsestual differences which connote the conception of "traditional" cultural differences. This evident evolution might lead us to expect that we are on a vector for a global (that is trans-national, trans-diasporic) culture. The most powerful influences which stimulate such developments lie in agencies such as the world-wide web and the global media. It is a hopeful perspective embedded in our present unhappy circumstances of parochial conflict. Regardless of the reality or development of such global cultural assumptions, we have to deal with the present reality in which the entrenched cultural differences of centuries persist across many parts of the world.

The inevitable clashes of cultures which accrue when two or more bodies of assumption interact are not new. From the Crusades of the eleventh and twelfth century to the meeting of the Old and New worlds at the time of Columbus to the colonization of the American west in the nineteenth century, expansionism and interaction has always resulted in

human foment and dissension. While we often decry the various ramifications of these respective colonization events, it is important to understand that they can also be very positive circumstances. Like biological hybrid vigor, culture clash can lead to new and important insights and understanding on behalf of all of the groups involved. Much depends upon how the various component members of the respective cultures approach this circumstance. While the majority of the history of these meetings and conflicts has been founded upon the expansion of one culture and the preservation of another, the expressed "will to power" need not universally be a destructive force. At present, much of our mindset remains anchored to this fundamental assumption and it is one that we must continually question in our effort to "know ourselves" and our basic starting assumptions. Do we seek to know other cultures to dominate and extinguish them, or do we seek greater cultural understanding in order to draw benefit and advantage from the respective opportunity presented? Again, regardless of our motivation, it would appear from the general trend of global development that our present circumstances are as unique in time as they are in space and it may be that we are experiencing a particularly active "transition" phase in human cultural development. Thus our services to our customers (both proximal and distal) should be tempered with this understanding of the present temporal circumstances. In fact, one of the central issues to be explored in this overall program of work will be the different cultural approaches to time itself.

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1.3. The Context of Culture

The natural way for us to seek to approach, understand, and benefit from an enhanced comprehension of culture is through the use of one of the major advances of western civilization. It is therefore axiomatic of our own culture that we seek to use science to understand the problem

to hand. As discussed by Russell (1961), it is clear that the breakdown of the two-opposing superpower scenario would eventually have to lead to the demise of the one and the ascension of the other. As per Russell's aspiration, the latter role was secured by the United States and through its current global hegemony it has sought to disseminate the principles of democracy and personal freedom throughout its respective suzerainties. The ascendancy of the United States was achieved through science and its essential handmaid, technology. As foreseen by Vanvevar Bush (1945), the nation which achieved the greatest superiority in science and technology eventually dominates because of the respective power conferred. This observation has two natural sequellae. One, it will be the most helpful to use the tenets of science to evaluate the present issue of required cultural readiness. But second, and potentially much more important, it is critical for our Country to perpetuate its leadership in science, which unfortunately is an achievement we are failing to sustain (National Academy of Sciences, 2007).

We cannot address the latter issue in the present work. However, in respect of the former concern we have to examine the fundamental assumptions of the traditional view of science and explicate whether they pertain to our present inquiry. The early twentieth century view of science had a detached, white-coated individual dispassionately evaluating a physical process in a sterile Laboratory. In many ways it remains our everyday, clichéd vision of science to the present day and permeates the general American suspicion about the 'crazy' scientist.[3] This separation, detachment or sterility is mirrored in the fundamental question of whether there are any acultural human "primitives." (and see Hancock, 2003). While we have suggested earlier that any appreciation we have of reality is

[3] Christopher Lloyd's classic interpretation of the Character "Doc" (Emmett Brown) in the film "Back to the Future" combines this persistent perception with the visual features of Albert Einstein to complete the stereotype.

essentially culturally-bound, this does not imply that there are aspects of existence which impinge equally on all individuals, regardless of culture. In this respect, we can use the classic hierarchical description developed by Maslow (1954) as a basis for our discussion.[4]

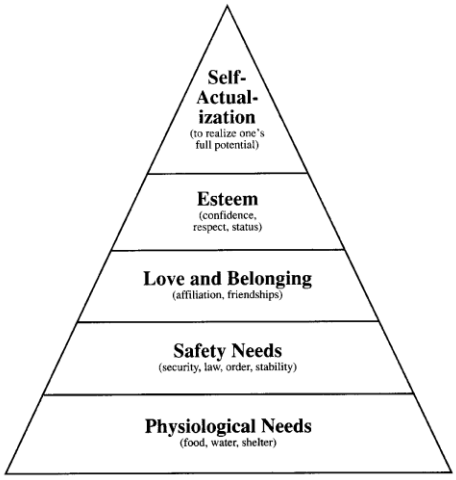

Figure 1.1: *The hierarchy of human needs as postulated by Abraham Maslow (1954).*

Maslow's identification leads us to believe that certain human necessities are beyond the purview of cultural interpretation. Thus, regardless of culture, one is materially dependent upon certain resources that one cannot do without, regardless of your cultural inheritance. These resources may, in fact be a potential driver of culture. A well established approach in cross-cultural psychology is known as materialism. According to this approach, culture is directly tied to humans' coping with

[4] It is both a tragedy and yet an ultimate acknowledgement of the insight of Maslow that the present hierarchy has become a clichéd and some passé representation. Irrespective of the general perception of this framework, we find it retains a fundamental usefulness for our work here.

environmental contingencies. The specifics of these contingencies range from one location to another, and therefore necessitate specific adaptations to ensure survival. As groups of people undergo this type of adaptation, unique cultures may come into being.

A logical deduction from these observations is that all humans require basic physiological forms of support. In essence, these are the fundamental necessities for the continuance of existence. However, it is a culturally-based assumption that continued material existence is an advisable course of action. We cannot say that these assumptions are universally adopted. We can say that those members of a culture which do not adhere to this belief have small chance of survival. The problem here is the temporal stability of these assumptions. Thus Maslow's representation is seen as being a universal in time as well as in space. Unfortunately, this assumption is not valid. This leads us to our first critical identification – what is culture? We must answer this at a definitional level and an operational level if our program is at all to be successful.

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1.4. Definitions of Culture

One definition of culture is extremely broad and claims that culture is "any product or fabrication of human society." (Herskovits, 1948).[5] We can immediately sub-divide this general definition into two specific elements. The first element is the physical, or built environment. This portion of culture represents all of the material manifestations that humankind has created and is evident in the way that our "natural" landscape has been altered by human activity (see Hancock, 1997). The second, companion element represents all the non-physical manifestations of human activity. Thus a Library and the books which occupy it belong to

[5] This should not imply that other members of the animal kingdom do not possess culture in a broad sense, assuredly they do. However, since our focus is necessarily on human culture, this definition serves as a valid starting point.

the first component while the ideas these books contain and the spoken language used to express these ideas are very much within the latter realm. As is also evident, any such division implies a third intrinsic component which is the interaction between the first two, see Figure 1.2.

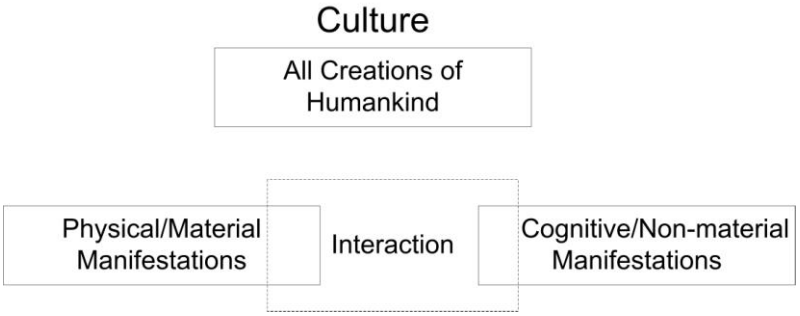
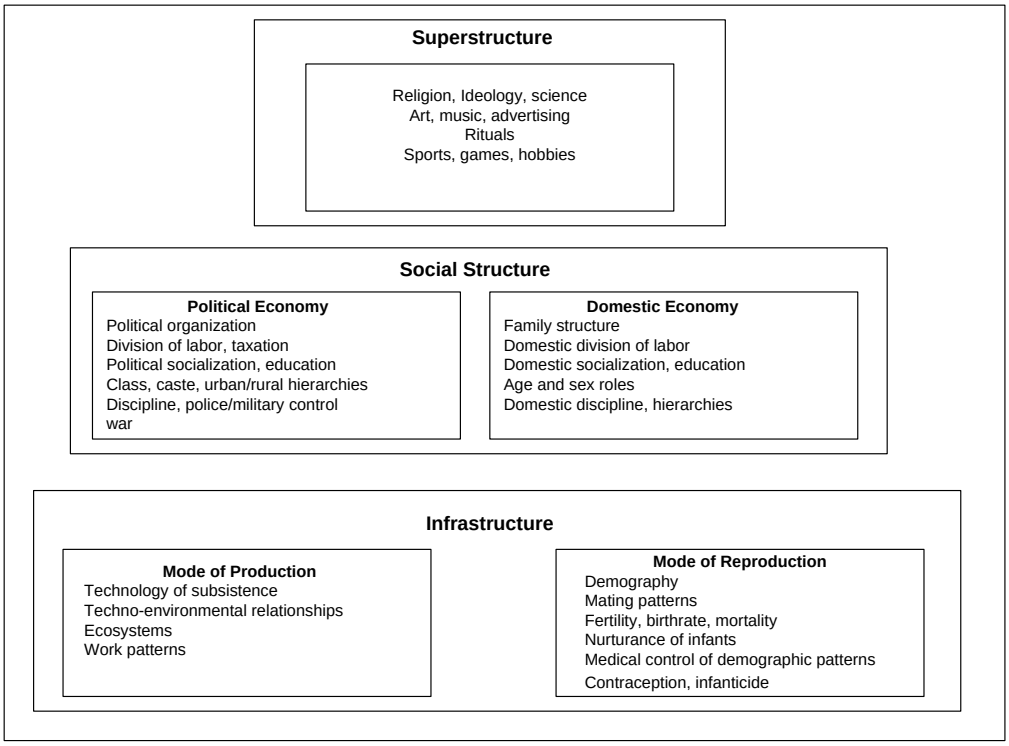


Figure 1.2: *Basic triadic representation of human culture.*

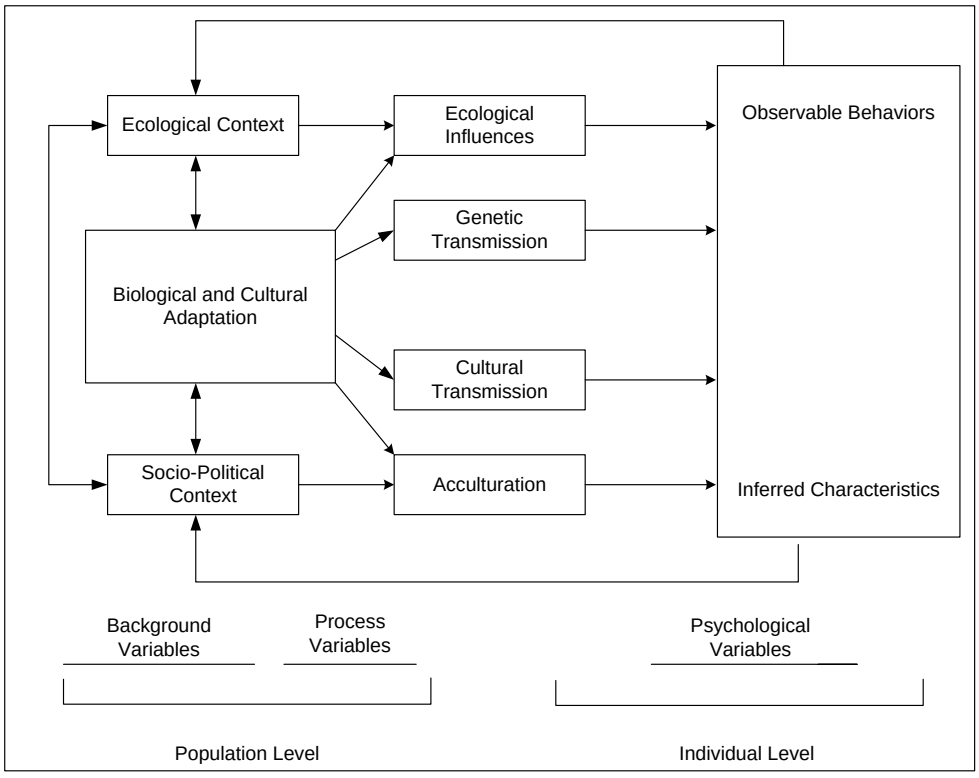
It is easy to try to identify these latter divisions as physical and social culture respectively but we should try to resist the temptation toward traditional, and hard and fast labeling at this juncture (and see Triandis, et al., 1972). Rather, we can see that the impact upon any individual of their culture and their cultural heritage is crucially contingent upon the static and dynamic nature of the environment which surrounds them and in which they live and mature during the first years of life. It is evident that one can extract a child from their cultural base at any stage of life and given that this divorce is total, it is an important empirical question as to the degree of this cultural imprinting and the age at which this basic acculturation occurs. This issue of cultural maturation of the individual remains absolutely central to our overall research effort. However, there are allied questions about the maturation and integration of cultures themselves. Thus, we can examine this issue of maturation at the level of the individual organism or of the collective group. Both are essential for a

fuller picture of understanding (deMunck, 2000; Segall, Dasen, Berry, & Poortinga, 1999; Super & Harkness, 1994).

In order to develop this level of understanding, it is prudent to examine a couple of theories of cultural development and maturation. As a basis for this discussion, a more through review of the materialist perspective of culture formation is necessary. Harris (1979) describes culture as existing at three levels known as infrastructure, social structure, and superstructure. As noted earlier, this approach views culture as rooted in the methods by which people survive. Survival therefore constitutes the lost level of this model, known as a society's infrastructure, and is represented by the ways in which people subsist. The methods by which societies subsist drive their political and social economies, or social structure. Ultimately, the social structure influences the superstructure of societies, which is constituted of those societies' ideology and beliefs. The following model is a representation of this view on culture.

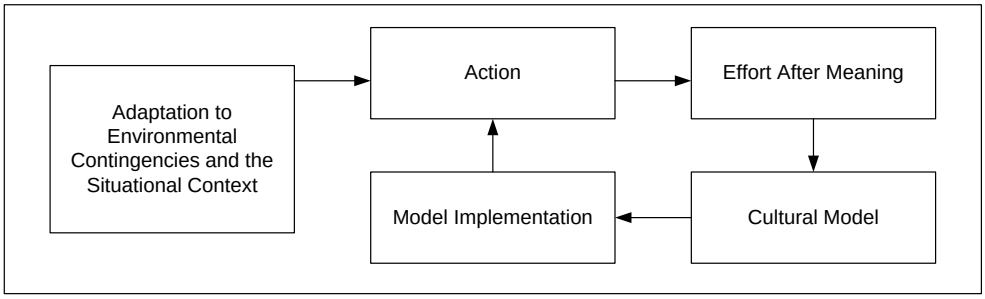


The materialist perspective provides a basis for understanding more recent view on cultural development as many subsequent theories and models of culture have been based on the basic tenets of materialism. One prominent example is the ecocultural model proposed by John Berry and his colleagues. According to this model, the ecological and socio-political context interact dynamically to produce biological and cultural adaptation at the population level, which ultimately affects behaviors and characteristics of individuals within populations (Segall, Dasen, Berry, & Poortinga, 1999).



A similar argument is presented by deMunck's (2000). He views culture is the precipitant of physical, biological and social factors that interact over time. Culture is therefore initially directly impacted by the adaptation of humans to environmental and biological factors. These factors shape experiences which are repeated over time and consequently become cultural practices which are endorsed by cultural values and beliefs. According to this view, humans will have new experiences if the environment changes and may be necessitated to alter their behavior. As experiences are repeated over time, humans legitimize and give meaning to their accompanying behaviors through culture. By legitimizing and

giving meaning to their behaviors, deMunck argues that humans are exerting effort to find meaning in prior experiences. In this sequence of events, the environment is the catalyst for culture to develop via the alteration of human experiences and adaptive behaviors. However, deMunck argues that culture can also be a catalyst for behavior and behavioral change rather than solely being an outcome of humans giving meanings to experiences and behaviors. This occurs when culture becomes institutionalized through norms, values, and beliefs and starts to shape human behavior. The following figure is a visual representation of this process.



An integration of the materialist perspective with traditional developmental psychology can be found in the work of Super and Harkess (1994). The basis of their work is that environmental factors and social contexts interact dynamically to affect the development of individual children. Accordingly, each child is reared in a "developmental niche". This niche is located within the customs and setting of a culture as well as caretakers' psychological characteristics, all of which is located in the larger human ecology.

Taken together, these models of cultural and individual development have some similar characteristics, especially in their materialistic roots.

However, each offers unique insights in terms of how the world affects cultural groups collectively as well as individuals within these groups. These models are mere beginnings of the ontological roots of culture, but they do provide a firm theoretical footing for the work that lies ahead.

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1.5. Frameworks Addressing Culture

The following framework is espoused by Adamapoulos & Lonner (1993), see Figure 1.3.

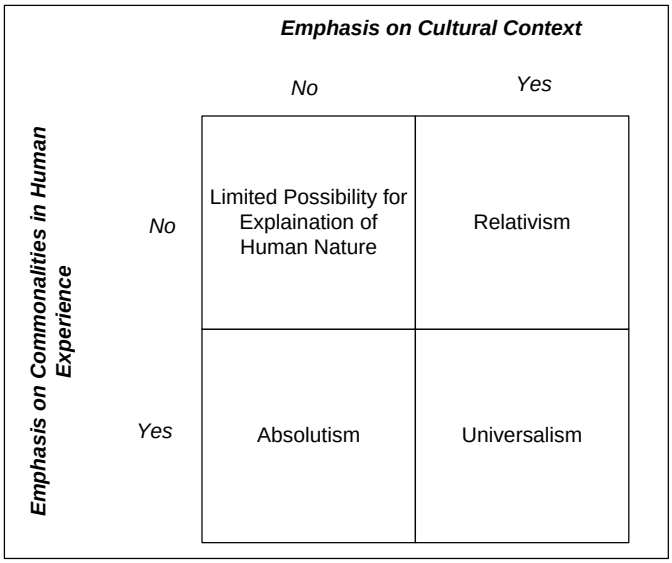

Figure 1.3. *Basic two-dimensional matrix representation of culture of Adamapoulos & Lonner (1993).*

1. Two Dimension of the inquiry into human nature

- Emphasis on commonalities in human experience
  - The extent to which we assume or emphasize that there are substantial commonalities in the psychological makeup, experience, and behavior of all human beings also known as the assumption of the "psychic unity" of humankind, and to commonalities in human experience and behavior as "psychological universals"
  - Emphasis on cultural context
    - The extent to which we assume that human beings cannot be studied in a vacuum, and that behavior can only be understood in the context in which it occurs, within the framework of a

certain social environment, or within a culture

2. ***Absolutism***
   a. A mainstream orientation in modern psychology
   b. Assume there is an underlying common ("true") nature to all human beings that can be identified, described, and used to explain the products of their activity
   c. Much research in this era aims at finding explanations for psychological phenomena by eliminating the environment or context within which they occur
   d. View variations we call "cultures" as nothing more than a thin veneer that mask basic human truth that transcend both time and context. Therefore, laboratory studies were favored with the capability to rule out those nuisance variables.
3. ***Relativism***
   a. Opposed to absolutism, relativism suggest to concentrate on describing human beings as they exist and function within their socio-cultural environment
   b. Anthropology: earlier anthropology that focus the lives of various group exclusively within their own culture and modes of thoughts
   c. Cultural psychology
   d. Social constructionism: a theoretical approach that has much in common with relativism. It challenges the notion of fixed and universal truths in the explanation of human nature. Rather, it assumes that human seek meaning, or construct, rather than discover, reality
      - May also characterized as "scientific isolationism" – that is, what is scientifically valid in one culture is not at all intended to be valid elsewhere
4. ***Universalism***
   a. Assume that it should, in theory, be possible to establish broad commonalities in human nature that reflect a deeper reality than the scientist's own conceptual categories.

b. Also agree with the relativists about the importance of culture, but insist that the search for psychological universals does not necessarily have to be conducted in a vacuum or out of context.
c. In brief, this approach propose it is possible to develop an approach to the study of human nature that emphasizes the importance of psychological universals, and is, at the same time, sensitive to cultural context
d. Emphasize both culture-specific and culture-general constructs
e. Example: Aggression is found in virtual every cultures, but it takes different form and appear in different circumstances

5. ***Psychological perspectives on these three perspectives.***
   a. An Absolutist Perspective on Intimacy
      - Reductionism, to reduce a nature phenomena into its most basic and essential component
      - After observing people in USA with various personal characteristics, they conclude the key process in intimacy is mutually rewarding self-disclosure
      - The research is move to focus on the causes and consequences of intimacy on very different people
   b. A Relativist Perspective on Intimacy
      - Reject the absolutist approach that psychological process can be isolate from its surroundings. Argue that in some culture, people don't do mutually rewarding self-disclosure still experience intimacy
      - Emphasize to understand how people construct and giving meaning the psychological experience in their own cultural and historical context
   c. A universalistic perspective on intimacy
      - Notion of intimacy appears in many cultures in one from or another.

- For example, Adamopoulos (1988) proposed the behavior is exchanging resources. The specific form that these exchanges take may be extremely different across cultures. The specification of conditions for different form of exchanging resources is one of the major goals of the universalist.

2. A Framework for Research Advancement

2.1. Introduction

Much as the foregoing discourse has provided important general observations about the issues of culture and the potential attitudes to it by our present and future military forces, we have to find some principled path by which we can systematically evaluate these effects. The following section presents just such a framework.

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2.2. The Input Matrix

Axis One: Information Processing Capacities

As illustrated in Figure 1, we have provided what can be described as an initial 'input matrix' to act as a basis for discussion. The matrix seeks to describe some major axes by which we can parse the questions of attitude and understanding. In principle, it can be applied to many realms of human inquiry but in the present case, we have specified the axes so that they are most relevant to cultural evaluation. The respective axes cannot be considered strictly orthogonal since we are, at the present, only in the early exploratory phase. However, a full description of these axes is merited. The primary (base) axis, expressed on the x-dimension, is a classic information-processing sequence. We have chosen this because this parsing of human sensory, perceptual, decision, and response capacities can be considered a ubiquitous one and a general description of capabilities which is independent of cultural influence. Like our previous observation on the commonalty of the lowest levels of Maslow's hierarchy, this sequence represents that of the earliest form of hominid and, in an important and fundamental way, pre-dates the development of culture as

we know it today. It must be clearly understood that such a statement pertains to the processes themselves and clearly do not apply to the nature of the information that is processed by them, which is assuredly culturally-bound.

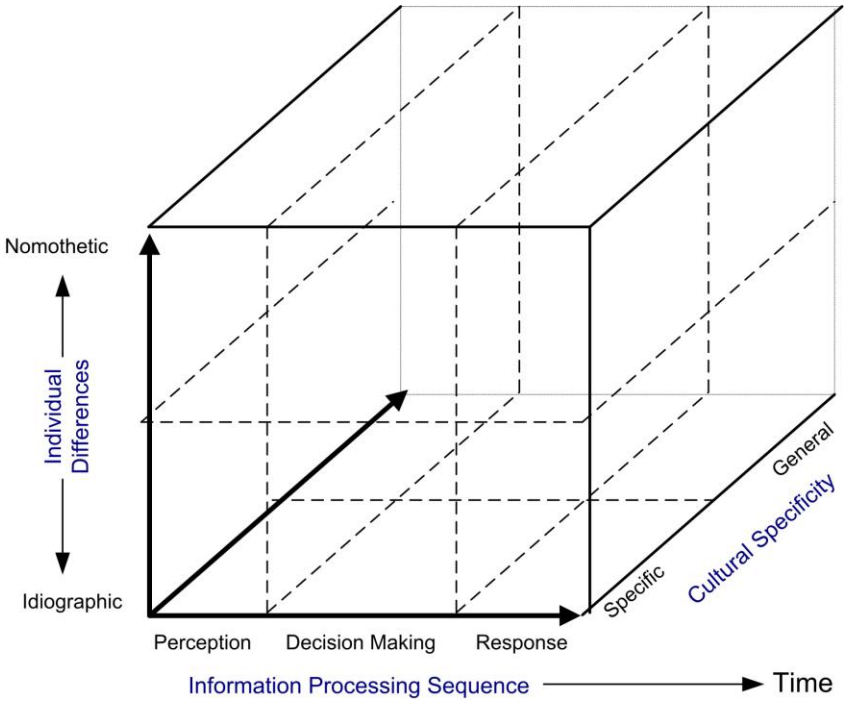

Figure 2.1: *Dimensions of the three axes 'input matrix' used to frame attitudes and response to issues of cultural response.*

In terms of these processes, they are composed of the first phase of perception. We take perception to be the confluence of the bottom-up process of sensory assimilation and the top-down process of situational evaluation. It is one of the cornerstones of psychology as a science that this confluence can be "fooled" by illusions which pertain either to the over-

dominance of top-down processing, or the confusion of failed, bottom-up integration. As Gibson (1979) noted, such illusions are informative but it is in principle, wrong to try to build a whole theory erected upon their occurrence and implications. We shall return to the issue of "illusions" of perception in the realm of cultural understanding at a later point in this discussion.

The following stage of this base axis is decision-making. Again, this has been the topic of much discussion and tradition, ranging from the rational decision-making models of the seventies and early nineteen eighties (e.g., Kahneman & Tversky, 1974), to the more recent, 'naturalistic decision-making' approaches of Klein and others which look to the intrinsic support offered by the environment to foster exert response based upon overt and covert pattern-recognition (see Klein, 1998; Hutchins, 1995). Again, as is obvious, the recognition, assimilation, and action-based on understanding elements of an individuals response are highly culturally dependent. In his classic text, Hutchins (1995) noted the capacity of south-sea islanders to navigate across vast tracts of open ocean which for most humans contain little or no useful supportive information. What was evident was that these individuals had become 'expert' in recognizing the subtle signals that the ocean provided in order to be successful at these life-or-death decisions. We assert that many such culturally-contingent cues are available to those who are not intimately familiar with any specified culture and a major part of the present task is to provide methods and approaches through which to distill these cultural cues and make them immediate accessible to military individuals who are embedded in these new, and for them, unusual conditions.

The third and final element of this first axis is the response component. Classically, this would include both response selection and response execution components. In some sense, this is the most important of all components of any of the identified axes. This is because it is only through action that change is effected in the world. Thus, culture will

certainly influence an individual's perception and their decision-making, however, if they ubiquitously select actions which have no substantive influence on events, then the study of such influences becomes largely an academic exercise. In the present circumstances, we take our eventual goal of serving the user of this information to be one of over-riding priority. In the pursuit of the present program of research, it will eventually be the examination of these respective responses which forms the basis of the structuring of the output matrix for information implementation purposes.

Axis Two: Individual Differences

One of the great challenges that faces us in this particular project is to distill the essence of a person's behavior in order to understand whether what they are doing is a culturally "normal" form of behavior which to the untutored eye might seem strange or even threatening, or on the other hand is actually a threat engendered by a particular form of personal activity. Thus the present axis asks to what degree observed actions are idiographic or nomothetic. At this juncture, a fuller explanation of the latter terms may be helpful. Nomothetic implies a general or law-like property of phenomena. In relation to human behavior, we can see it as representing the "norm," as indeed its entomological basis implies. In statistical terms this is the representation of central tendency as given by measures such as the mean, median, and mode. It is the first moment of the distribution. In respect to culture, we are asking the question – is what is observed normal for that culture. All cultures embed these norms of behavior but, of course, these norms do not stay constant across cultures. Thus it is important to understand what are the cultural norms of behavior in one's own culture and whatever culture one is either embedded in, or exposed to.

As there are norms of behavior, so there are aberrations of behavior in all cultures. These behaviors are termed idiographic, or

person-specific. In large part, because traditional cultures are collections of behavioral norms, idiographic behaviors are exceptional on both a personal and collective level. In late Victorian English culture for example, one even had names for individuals who behaved in these consistently unusual ways ranging from "crazy" for the poorer members of society to "eccentric" for the strange among the extremely rich. The degree to which any culture can sustain these individuals and their associated behavior co-vary with their size, their resources, and the degree to which their history has tolerated or even encouraged such aberrations. In the realm of research psychology, we term this dimension one of "individual differences" and this dimension has been viewed as either the most unmitigated nuisance to a general advance in understanding, or the very stuff of psychology itself (Cronbach, 1957). As we have already indicated, we cannot consider such individual differences except in light of the culture context against which they occur. Standing behind a large vehicle cooking meat might be viewed as very strange behavior by a native of India but tail-gating is a tried and trusted activity in America. Similarly, napping after lunch might seem "lazy" to someone from New Zealand, while it makes perfect sense to an individual from Spain. Thus individual differences in behavior can only be assessed against the background of what is considered the baseline of normality. In statistical terms, we might well say that the second moment only makes sense in terms of the first distributional moment, or more colloquially the standard deviation or standard error have to be considered in respect of the mean. This is what makes the coefficient of variation and *z* scores such interesting response measures.

This statistical argument implies that we have to define what we mean by i) the number of presently existing 'cultures' in the world and the degree to which they can be hierarchically organized as per metrics such as membership size, land-mass occupied etc. This hierarchic breakdown should this be able to specify cultures, sub-cultures, groups, etc according to some generally accepted measures. If this decomposition is possible,

and not all scientists would agree that it can be achieved. We then have to specify the boundary layers of those groupings. Again, these boundaries may be geographical, they may be founded upon the use of common language, common foods, in fact on any of a plethora of measures. However, it is important to agree what those appropriate measures are. Then, within the prescribed boundaries one could begin to attempt to examine prototypes of behavior. This taxonomic approach is rather Linnaean in conception and would seem to require a degree of stasis that the modern world simply does not afford us. That is, this system might work well if cultures were relatively isolated, each like a small, non-interacting island. However, cultures certainly overlap in time and space and constantly interact. As such, this renders the issue of individual differences in behavioral characteristics as a highly arduous endeavor. If we cannot approach the issue from the outside-in, i.e., one a historical-geographic basis, perhaps we can approach it from the inside-out. This implies we will need to know much more about the culturally-contingent brain and whether dynamic patterns of brain activation can identify individuals common across a specific culture. It suggests that a science of cultural neuro-anthropology is now needed.

Axis Three: Contextual Contingency on Culture

Our final axis now embraces the realm of individual psychological evaluation but takes us further into the realm of the collective and interpolates what we have created in the possible range of cultural contexts (Berry, 1969). Although we have agreed that all observers approach questions from their own, unique cultural background, we have also established that there must, at least in theory, be some forms of behavior that are not completely culturally bound in a deterministic fashion. Thus our final axis asks to what degree our perceptions, our judgments and decisions, and our actions [to whatever degree they are uniquely our own or are shared with the normative action of our immediate peers] are contingent upon the culture which we occupy or

stand independent of that context? This notion is somewhat comparable to the conception of "emic" and "etic" perspectives that emphasizes the degree to which emphasizes research that focuses on cultural specifics (i.e., emic approaches), or in contrast one focuses upon trans-cultural "universals (i.e., etic approaches) (and see Berry, 1969). Also, we need to consider group membership at varying levels such that one may have family "cultures", institutional "cultures" and the like, embedded in various degrees of kinship, values and distances (see Singer, 1998). The co-variate here is also the personal determination towards individualism versus collectivism (Trandis, 1995). These are some of the crucial issues in the whole of cultural readiness. Are there some behaviors that we share in common despite our cultural differences, or is behavior so culturally bound that we can never draw general principles across all human beings. Of course, in some sense, as there is a sequential growth of a global culture, the practical ramifications of this question become progressively more moot. Although the initial perception of western science is that trans-cultural behavior is objectively feasible (see Hancock 2003), this remains an empirical issue that may be addressed, if not solved, by in-depth experimentation.

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2.3. The Output Matrix

Let us suppose then, for the sake of the present argument, that we can parse our investigative approach as is advocated in the structure of the input matrix. What use would such information be to us? The answer in terms of the current project is that we would have to turn such information into a useable format for our customers and the following output matrix seeks to achieve that goal. Like the input matrix, and largely for the purposes of conceptual simplicity, it has three major axes. As with the input matrix, we cannot at the present time, be assured that

these are strictly orthogonal, although they are presented as such in the illustration shown in Figure 2.2.

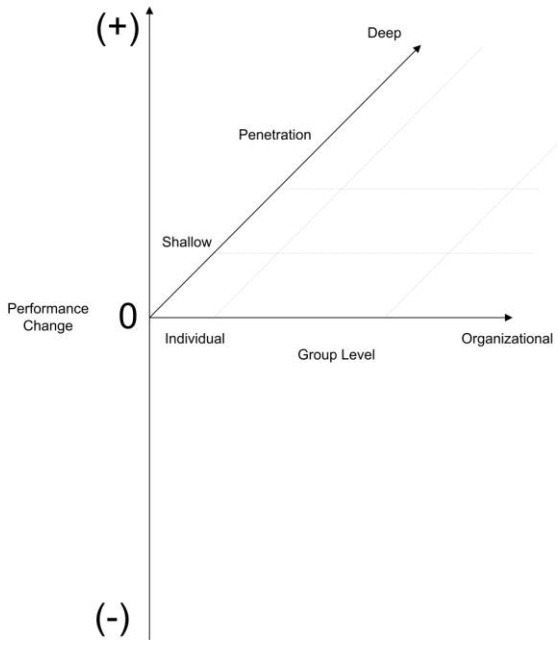

Figure 2.2: *Dimensions of the three axes 'output matrix' used to apply information derived from the initial input matrix.*

Axis One: Target Audience

As with our previous description, we can start here with the base axis and this is labeled "group level" on the illustration. The question that is being asked here is whether the information is exerting an influence on a specific individual, the whole organization, or any level of nested group in

between. This notion of differing nesting of groups of individuals is intrinsic to military organizations and should therefore need no further articulation.

Axis Two: Information Impact

Having, to some degree, decided what level of the organization and what group size the output information is targeted to impact, the question now arises as to what degree that information is processed and incorporated by that group, from the individual to the whole organization. Clearly, such information can be considered pro forma trivia that it somehow mandated but is regarded practically as either a nuisance or even a distraction. In contrast, the information might be seen as absolutely critical to the mission of the individual or group who receives it. We label these differential levels of processing as shallow and deep, respectively. There is a general persuasion that "our" information should always been considered vital and thus entrenched deeply into the actions and activities of whatever target audience is selected. However, we should be aware that this is an assumption of the military culture (admittedly among many others in the western world) but the great issue of the early twenty-first century is information overload. Thus, we need to examine our own assumptions here, as well as trying to assess this level of penetration.

Axis Three: Performance Effect

When Franco Harris made "the immaculate reception" it was not the play as drawn up. For Pittsburgh Steeler fans, there was little difference. The simple fact is that the play worked and the game won. This is the pragmatic side of performance measurement. Often, users don't care why something works, they only care that it does work. Science works in a different way. We want to know the reason something works. Thus the final axis in the present output matrix is performance effect. It should be noted that for all our good intentions and for all our careful

training and pedagogical activities, it is a possibility that what we communicate might have a negative effect on outcome. Thus, it is vital here to state as explicitly as is possible, exactly what the criteria of performance success actually is. There is a tremendous problem with "under-specification" That is, incomplete or insufficient *a priori* description of what connotes success. This issue has been explored in detail by Hancock (2007) and Hancock and Sheridan (2007). In essence, if it is not state clearly beforehand what represent success or failure, "success" can be declared out of the most abject mess, and conversely the most effective program can be trashed. While this is often the stuff of politics, it should not be the stuff of science. We thus devote a further chapter to the issue of measurement in complex systems such as those represented by culture and cultural assessment.

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2.4. The Flow Diagram

Now having shown how we are able to structure an input matrix in order to solicit the information we require, and how to structure an output matrix which will place this information in the form and context most useful to the user, we need to provide a preliminary conception as to how this overall process may work. This conception is shown in Figure 2.3 below.

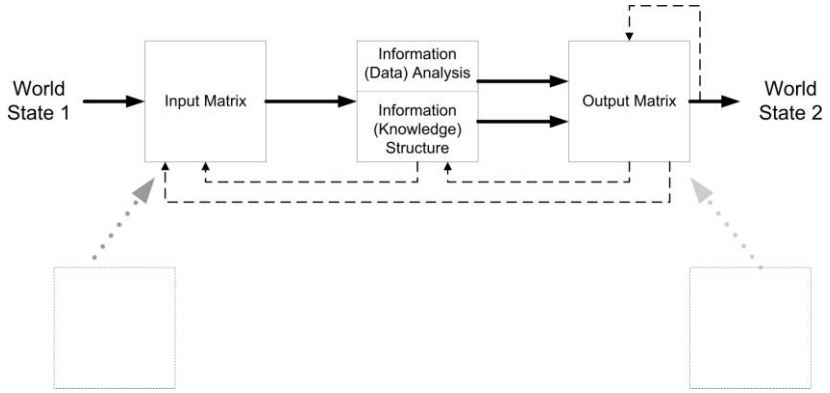

Figure 2-3: *Simplified flow diagram showing how the specific input and output matrices may be used to structure a research and application sequence.*

Many of the processes that seek to alter the world are cast as feedback systems that use information about their own action in context to regulate future response (Wiener, 1965). The present diagram represents juts such a system at about the simplest level of sophistication possible. As can be seen, the state of the world at time (1) represents the circumstances that we wish to understand. This is our present state in the nascent program we are creating. The input matrix that we have presented above provides the basic framework to collect and organize data of interest. These data, which initially will be largely based in subjective apperception, are then subjected to analysis by standard and advanced psychometric techniques. In essence, the raw data is transformed into general trends and summated vectors for entry into the next phase of processing. This next phase represents the search for the ways in which to most effectively structure and then (through the output matrix) communicate this understanding. The feedback loops between each stage and element of the process provide the regulatory aspects of the feedback system. We should hasten to add that this is a very simplistic "first pass' representation and that as the program progresses, this framework will be elaborated and informed by our respective empirical progress.

3. Problems of Measurement of Complex Phenomena

3.1. Introduction

It has been opined by a number of commentators that science is crucially contingent upon measurement (Meister, 2004). By implication, it might be inferred that the more accurate the measurement the more precise, and therefore predictive, the science. In some sense, it is this issue which plays into the division between the so-called 'hard' and 'soft' sciences. However, there is an alternative perspective from which to approach this issue and this relates not simply to the accuracy of measurement but the very nature of measurement itself. Our history in physics and engineering has created an ethos in which mathematical and numerical assessment has accompanied their evolution as topics of study. Thus, in some sense, numerical methods have grown and evolved to be applicable to these very sorts of issues. In contrast, our formal study of complex, multi-variate processes such as those involved in psychology, sociology, cultural, and anthropological investigations have developed much more recently and have, as a consequence, adopted convenient measurement methods. However, it is essential to understand that virtually none of the quantitative instruments of modern science have been created or refined for this latter purpose.

This compounds the problem of measurement difficulty which is already inherently challenging because of the very nature of processes themselves. Our recent experience has illuminated the fact that behavior of interest of these complex processes is inherently 'emergent' in nature and thus not linearly predictable from the simple interactions of its baseline components (and see Hoffman, Marx., Amin, McDermott, Brents, & Hancock, in preparation). Thus, even if we were to possess in-depth numerical analysis of component factors all arrayed on neat ratio scales, we may still not necessarily be able to predict performance

response at a more macro-level. The first step in addressing such issues has now been achieved, that is, recognition of the problem space per se. Now we have to step toward possible forms of solution.

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3.2. Figures of Merit

In searching for avenues of promising resolution, we have to immediately acknowledge that there is an existing literature on this very issue and extract what understanding and advancement we can from those previous efforts. Thus, for example, NASA in the mid 1980s looked to generate some defendable metric of the overall piloting task both within the cockpit and across operational platforms such as flight-deck, ATC, AOC, etc. For the pure piloting task, the effort was to decompose the individual's performance into component elements and then to use a summation of z-scores to provide an overall "figure of merit." Had these individual tasks each been under to compulsion of optimization this might have proved an effective amalgam. However, unfortunately, many components could be 'satisficed' (as compared to optimized) and still satisfactorily performed. (For more details on satisficing' see Simon, 1975).This meant that the time-based measures of performance were largely flawed in their fundamental assumptions and thus the overall measure was itself of limited value. When we subsequently expand the range of behaviors and actors involved, such inherent assumptive flaws reduce the value of such hybrid constructs significantly. This is not to say that additive and multiplicative approaches should not be explored and exploited where possible, it does confirm the importance of understanding their intrinsic limitations.

Similar limitations have been noted and address in the new, emerging area of resilience engineering. Here, the attempt has been to step back from immediate, momentary assessment to ask what connotes

success on behalf of an individual, a group, or an organization. Because our overall aim in the present project is to provide a noticeable mission advantage on behalf of military forces at all levels of organization, it is recommended that we explore and exploit these new, case-based approaches to organizational response adaptability. One clear innovation has been to ask more pertinent questions concerning the time-scale of performance assessment. Thus, a traditional time unit, such as a mission, may or may not represent the appropriate unit of assessment. Rather, this could be a more micro-scale (instant IFF decision) or a macro-scale (whole deployment interval, or even whole engagement) level of analysis. The notion of scales of spatio-temporal measurement has been address previously Hancock and de Ridder (2003) with respect to social transportation safety, and we intend to exploit this spatio-temporal matrix-based approach here.

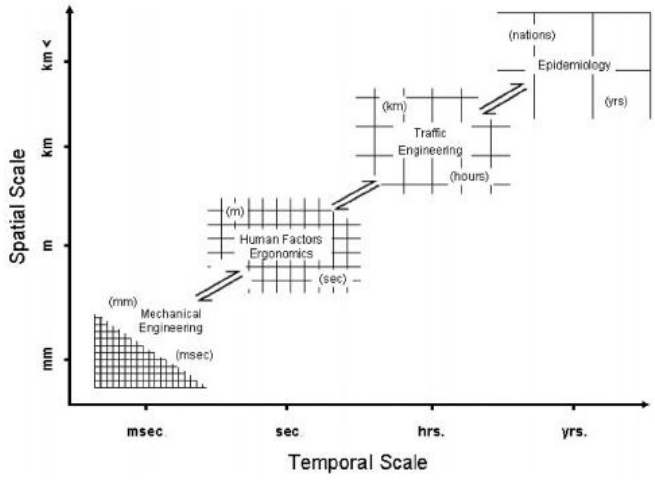

Figure 3-1: *The representation on events from a micro to macro-scale on both the spatial and temporal axes. The present illustration is derived from Hancock and De Ridder (2003) and the central context here is transportation safety. However, the same fundamental architecture can be applied to the measurement of performance in any realm including the military consideration of cultural issues.*

These considerations of performance are largely focused upon external, objective kinematic and kinetic metrics. It is the natural refuge of the 'hard' sciences, which unfortunately has been frequently taken as the leitmotif of science itself, even by those in the realm of psychological investigation (e.g., Watson, 1913). However, the mentalistic, subjective dimensions is of equal if not greater importance for without subjective apperception, cognition is merely electrical engineering (Hancock & Szalma, 2003; see also Hancock, Parasuraman, & Weaver, 2002). Thus, as well as the dimension of complexity, we have to also grapple with the issues of subjective perception and the degree to which such perceptions accord with reality (a true definition of psychophysics). As one commentator is purported to have said, "There are the hard sciences, and then there are the difficulty sciences." The good news in this rather gloomy survey is that new methods in non-linear dynamics and complex systems are emerging (Kauffman, 1993), and some of these are beginning to be developed and applied to the issues which face us here (see Hancock Parasuraman, & Masalonis, 2000; Hancock & Szalma). We will not claim here to provide deterministic closed-ended measures of complex systems of emergent behavior. What we can do is to survey and incorporate the most recent advances, in these one of the most challenge realms in all of assessment.

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3.3 Emergent Patterns

To conclude our first pass comments on the issue of measurement, it is more appropriate to think of cultural assessment as movements within a multi-dimensional phase space (for an example, see Kugler & Turvey, 1987). While we might be fortunate enough to be able to spot some key indicators, and we anticipate that our attitude survey questionnaire data will give us a baseline for future comparison, we must

conclude here that investigation of methodology per se will be a vital element in our future efforts. As with all science, there is no guarantee of outcome but only an assurance of effort. At present, we believe that longitudinal and cross-sectional data will represent key components of progress.

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4. Considering Some Components of Culture

4.1. Defining Dimensions

Given our earlier global definition of culture as the sum total of all of the creations of humankind, it can be easily anticipated that this is a topic that can quickly "get away" from the unwary researcher. Indeed, with that definition, what facet of human existence is not covered? An important step then to begin to frame the content of cultural issues, as opposed to a framework by which it might be investigated, is a descriptive taxonomy which will parse the main areas of interest. A ten-part description has been given by Harris (1986) in respect to a specific evaluation of cultural issues in a complex, advanced context (and see Lozano & Wong, 1996). His listing is present here in Figure 4.1. In this initial evaluation we can deal with some of the topic areas he proposes and provide a more detailed description of what these representative examples each contain. As we elaborate this initial framework it is the expectation that follow-on work will allow a much more detailed exposition of the various component factors. Hence the present section present synopses of only a limited number of what we presently consider the most relevant and most tractable to the current research team.

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4.2. The Sense of Self in Time

We should note initially, that Harris (1986) generated this framework for the space program in work of which the present author was a team-member. [6] In this section, we have concatenated the forms of

[6] Dr. Harris was part of an overall consortium which was led by Jim Miller (former President of the University of Louisville, who was then the leader of an enterprise called the University of the World), the originator of Living Systems Theory. Other team

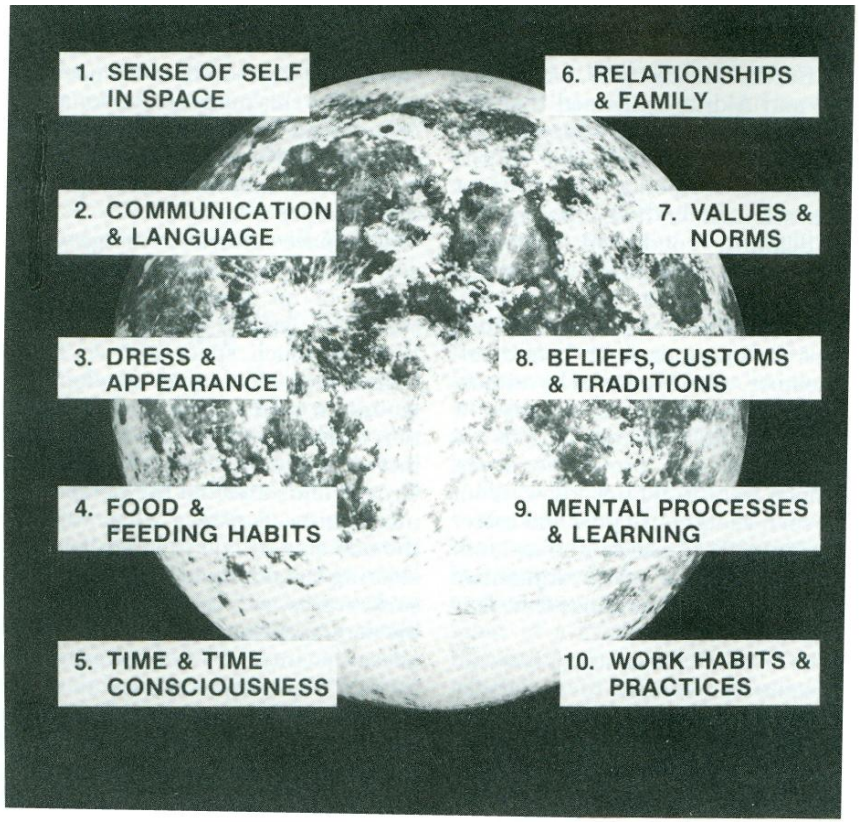

Figure 4.1. *Parsing the Cultural Domain. Illustration adapted from Harris (1986).*

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members included Dr. Norm Smith, Dr. Al Harrison, the author of living aloft, and the present author, Dr. P.A. Hancock. The group was set to begin work on a large-scale project to develop the use of living systems theory applications to the development of a permanent moon-base. Most unfortunately, as the final contract was in the process of completion, the Space Shuttle "Challenger" exploded and the project was put on permanent hold. A number of members of the team are now, unfortunately, no longer with us.

sense of self into one single factor, that being consistent with the Minkowski (physics) based interpretation of space-time. However, since the cultural literature treats these two facets as separated, and since it is our present persuasion that time is a critical factor in the current program, this present section will focus on the cultural differences in the perception of time.

Tell me what you think of time and at once I can understand what to think of you. This is a reasonable contention because time is an *a priori* primitive. Time accords to no single sensory input. Although we largely code space via vision, there is no single equivalent for time. Thus, for each different culture, time is an emergent property of the sum of their individual and collective sensory experiences. In this respect it reflects a fundamental character of the collective consciousness in which such consciousness is the major conduit of each individual culture. It is this emergent property of time that makes it such an important characteristic of each culture under consideration. Much has been made of the Whorfian notion of timeless cultures and much has been written about these radically different ways of viewing the notion of duration. However, no purely timeless culture has prospered extensively (see Hancock, 2007a) and the rare pockets of culture that have tried to treat time in this manner are now largely vestigial to the modern world. Thus time can be considered a ubiquitous facet of all current, thriving cultures. But all cultures certainly do not treat time alike.

One of the major sources of conflict between cultures comes from the way in which they respectively treat time. More and more, the advent of and penetration of high-tech systems is beginning to dissipate this form of conflict. Due to the basic architecture of almost all computational systems, the western (largely Newtonian) approach to treating time has begun to percolate through all cultures which now compete through the use of technology (see Hancock, 2007b). This underlying architecture has a profound if somewhat esoteric influence on the cultures it penetrates.

For example, partly because of the idea of time embedded in the resident computer systems some companies, especially those of American origin, sought to abrogate the Spanish custom of siesta – a short afternoon nap following lunch. An eminently sensible cultural adaptation in a hot country, the combination of air-conditioning and the mandates of the 24-hour society served to slowly eradicate this traditional cultural practice. Similarly, as English is the lingua franca of technology, it is often the case that language itself is altered by computer systems, which again at their heart contain a western notion of time and timing (Hancock, 2007b). As with Harris (1986), we see perception and especially the perception of time as central to an understanding of differing cultures. As we have noted in previous delivered reports, we strongly recommend further special formalized study of this crucial issue including a formal meta-analysis if possible.

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4.3. Communication and Language

The primary conduit by which we communicate intent is language. In the present report, we do not focus in any detail on language since that is the domain and expertise of many others in DLO who have much greater understanding and facility with both the research and teaching issues associated with languages. What we simply wish to note is that this issue is a pre-eminent one and that language is the dominant, but not the whole of communication. For example, below we talk about the subtlety of differing facial features across cultures and communication can also be affected by wide-scale media and certainly need not be on a one-to-one basis. These various conduits of communication are highly influential in dictating perceptions upon which subsequent actions are based. Often differing sources of communication are in conflict. They may well provide completely opposite information and an individual's subsequent perception is then influenced by resident, intrinsic propensities such as

trust and familiarity. For our present purposes, it is enough to understand that our end goal is to create situations which facilitate individuals with whom we are interacting, taking the course of action most conducive to the benign aims which should represent our legitimate goals. To achieve these ands and to resolve potential conflicts it is crucial to understand how these various spectra of communications media and conduits interact to eventually affect those outcome actions. With the evident difference between cultures in how they link perception to decision-making and then to action, this issue of a science of cultural communication is a broad but vital area for our program to pursue. In the same way we have a formal science of information (see Shannon & weaver, 1949) we now need a similar level of quantitative advance in a science of communication with an emphasis on human capacities and variations.

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4.4. Physical Appearance

One of the more important elements of culture is an individual's physical appearance. Although mean anthropometric values do vary across race, the spread of individual variability within any particular human group is such that bodily size is not usually a critical indicator of group membership per se. However, two aspects of physical appearance are usually strongly discriminative. These are facial appearance and clothing. We can deal with the latter first. Various cultures adopt various characteristic garbs and these can well denote one's membership or familiarity with that culture, at least from surface appearance. Some cultures have relatively little body covering, especially in hot, tropical areas, and thus concealment of membership and non-membership of any particular group is more difficult in these circumstances. In contrast, other cultures have extensive coverings and these traditions or full-body coverage do not always co-vary with climatic conditions. Indeed, coverings are often used for symbolic as well as utilitarian purposes and

thus respecting and assimilating into differing cultures may well include sensitivity to local clothing customs. On occasion, these principles can conflict with intrinsic principles inherent in the base culture and judgments have to be made about the issues of compromise under these specific circumstances. Often, one will find that the costume of any particular culture is well adapted to the local conditions and is often less symbolic that might initially be conceived. In terms of potential learning outcomes for a program of pedagogic instruction in cultural readiness it will be important to emphasize adaptability and openness to new and innovative ways of approaching problems posed in different global locations. This might well include changes or alterations to accepted patterns of dress. This issue is especially relevant to military personnel who, most often, must adhere to the rules concerning uniforms. While military discipline might well require the adherence to rules on uniform, for particular operations that require important considerations of integration, some degree of compromise may be required.

While dress and physical appearance can often be readily altered, facial characteristics are much less mutable. Human beings are especially tuned to recognize faces and there are certain brain areas that are purpose-directed to accomplish this critical human task. It is crucial for the new born to be able to recognize maternal presence and equally important to be able to use facial expressions to communicate nascent intent. Work on human face recognition has a long and interesting history in psychological research and is one which continues today. Such is the power of facial recognition and the recognition of emotions expressed by the face that they are often recommended as displays for complex systems. These readily understood percepts can rapidly communicate the state of a multi degree-of-freedom system in an effective manner (Flury & Riedwyl, 1981; Huff, Mahajan, & Black, 1981; Jacob, 1978; Jacob, Egeth, & Bevan, 1976). Cultural differences in facial appearance are readily recognizable and there is evidence that facial recognition and the recognition of emotions within one's own cultural group is greater than that across

cultures. Given this greater within-cultural sensitivity it argues that one aspect of learning that needs to be engaged is the tracking of facial patterns of emotion across cultures and then some form of training mechanism that let's individuals from a different culture recognize these (for them) more subtle messages. Indeed, this is a direct analog of language learning and is a vital extension to it. That is, facial expressions derived from physical appearance is essentially a sub-category of intrinsic and sometimes explicit communication. These various aspects of non-verbal communication are critical to the success of the culturally aware individual since such intrinsic messaging can sometimes negate and contradict even the most fluent verbal messaging. Thus understanding cultural differences in facial expressions will be a critical area of future research, especially with respect to how to generate training programs to facilitate the learning of these often subtle sues.

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4.5. Perceptual and Learning Processes

In what follows, we have taken the tow notions of perceptual and learning processes and beliefs, customs, and traditions and have reversed the order from that which they appear in Harris (1986). This is because we believe that the perceptual and learning capacities are prior processes with respect to subsequent, large-scale social beliefs and customs. As we have previously stated, understanding how perception is contingent upon culture is central to our overall programmatic efforts. Whether that understanding is to be had at a neural, a behavioral, or a social level, it is vital that we ascertain how differing cultures affect the process of growth and maturation to condition the growing child's perception of the world. It is our central hypothesis that the effects of culture grow linearly with the level of cognition. That is, at the basic level of physiological processes, we hypothesize that cultural effects have a highly limited impact. Thus, the ranges of sound that can be perceived by peoples of different cultures will

not vary significantly. However, as the level of cognition increases from simple sensory processes through higher level perceptual capacities to final levels of higher decision-making, the influence of culture will get progressively more impactful. This can and will lead to evident paradoxes since, for example, it will be clear that all spectators at a specific event will see or experience exactly the same sequence of events. However, since perception and decision-making are subsequently filtered through higher level cognitions, then not all will report the event in the same way. More formally, the degree to which any activity or process involves higher-level, top-down processing, the greater the impact of cultural influences. This is a reflection of the issue of learning since we view learning as highly culturally contingent. Since learning primarily affects these higher-levels of cognition, then the greater the degree to which that learning is involved the greater its influence. Since it is these higher-level cognitions that are the crucial focus of our research program it is vital that we understand the process of cultural learning, especially in the phases of early-childhood when these initial behavior patterns are set and established. As a result, we propose that one focus of our forthcoming research work be on the cultural development of the young child

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4.6. Beliefs, Customs, and Traditions

As the child matures, they begin to assume an ever greater role in the life of their particular culture. Most cultures have 'rites of passage' which symbolize the child's transition from the impotent world of the infant into the enfranchised adult. Vestiges of these rituals appear in virtually all so-called 'advanced' cultures and are often more explicit in so-called 'primitive' cultures. It is at these transition points that the child is expected to begin to show a degree of mastery over the various customs, belies, and traditions of the group. In simple societies, such customs and beliefs are often straightforward and serve direct, utilitarian functions.

They may involve knowledge and skills in hunting and gathering, in animal husbandry or in other forms of agriculture and food production. Often they involve the essentials of existence. As the cultures grows older and more sophisticated in terms of elaboration in number of members and dispersal across space and time, these various rituals can become more complex and esoteric in terms of what the ritual represents. In extremely old and byzantine cultures, these rituals can be almost totally arcane and almost completely symbolic. Often such rituals satisfy a sense of continuality and have become engrained into the fabric of that society, being perpetuated solely because they continue to exist. Hence, over time they can lose their utilitarian aspects altogether.

Beliefs are founded upon the ways individual cultures conceive of the structure of causation of the world around them. The more that the culture understands about the world, the more complex the belief system becomes. Our western society is wedded to the idea of truth and understanding through empirical science in that it continues to seek a "ground truth" about the Universe. Not all cultures, in fact few others, are predicated upon such a belief. Indeed, for a culture to survive and prosper, its belief system need have no necessary connection to a purported "ground truth" it is simply a matter of how well that culture functions within the biological niche it occupies. It is eminently possible for a culture to have a belief system that is totally at odds with how we in the western world perceive the Universe and yet still function and flourish. It is thus critical to understand that our scientific stance is itself a belief system. One we prize and hold dear indeed, but still s cultural assumption that we make. The pervasive success of technology and the exploration and advances that such a belief system makes possible, argues for its enhanced utility over other such systems, but again this does not negate the central tenet that the way we view our world is equally founded in our own beliefs as any other culture. Thus the key to training culturally aware and culturally useful personnel is to provide a pedagogic program which exposes these assumptions and communicates the

assumptions of other cultures and the natural ramifications of those assumptions both within the individual culture itself and across cultures when inter-cultural communication becomes vital. Thus we have singled this out as one of the key factors for cultural understanding and cultural preparation.

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5. Strategies, Tactics, and Levels of Command

5.1. Introduction

In respect of strategies, tactics and levels of command, we like to view this issue in the form of a matrix. On one axis is time and embedded in that time axis are the near-term elements that compose present tactics and the longer term elements that compose strategy. We shall address each separately. On the second axis is level of command. Although the military has traditionally been structured as a formal hierarchy, and rank remains a mark of this to the present day, we are very aware of the dispersal of command authority in recent times and while we will deal with personnel according to their rank, we shall look to indicate where authority is liable to vary from a direct co-variation with current rank (e.g., squad leader's on the ground decision authority in current MOUT operations).

As we have now noted on a number of occasions, the demands of modern conflict have evolve from the straight kinetic fight to those which now emphasize non-kinetic effects. Where the central idea is to destroy the enemy, there is relatively little that one needs to know about the nuances of their culture. It is true that information concerning their way of fighting including troop disposition and the like, were central to success in battle, we cannot image the Mongol hoards or the Viking invaders worrying too much about the subtle intricacies of the peoples they attacked. And in large part that same level of insensitivity has held sway for some thousands of years as the fundamental goals of conflict have not changed. Yet now, as we know, the definition of success in conflict has itself changed and so we need to alter our own perceptions of what is required to achieved the now desired state of 'winning.' The more recent, current conditions of conflict with which the U.S is occupied reflect that

necessity. Thus, we will discuss our proposed approaches to short-term (tactical) and longer-term (strategic) requirements.

5.2. Tactics and Cultural Operations

The primary contemporary concern is naturally with the engagements in which we are currently involved. As has been noted, in active conflicts these include primarily broken urban operations but the dimension that we wish to emphasize in the future will be fundamentally stability-building operations. Thus, tactics and strategies concerning cultural readiness will have to be oriented to these respective mission goals. This can well mean a fundamentally different way in conducting military and certain sectors of civilian training. At present, military training tends to emphasize battle or conflict preparedness in which rote assimilation of particular performance skills becomes paramount. The primary aim here is to build an efficient and seamless fighting force that can achieve its set goals through kinetic action. However, when the vision of success is itself akinetic in nature and the processes through which much of this success is achieved is also akinetic, then the munitions which support kinetic action can be largely unhelpful, and the training associated with them also.

Given our present circumstances, it is the case that much of the kinetic force is applied by the lower ranking members of the forces, traditionally under the direct supervision of higher ranking members. This is what is meant by a 'chain of command.' However, as the speed of action and the associated local uncertainty increase, the locus of decision is necessarily pushed further down this chain of command until today, critical operational decisions are often made at the platoon level and even below. We need to view this vector of progress as an analog exemplar for the akinetc aspects of cultural responsiveness. That is, it will not be Generals and high l-level commanders whose immediate actions affect the cultural interchange necessarily associated with stabilization operations. It

will be the perceptions, attitudes, actions of those individuals operating on the ground whose responses will dictate the degree of 'winningness' of any particular operation. Indeed, given this form of evolution it is critical to begin to frame question about what command decisions actually are in circumstances that feature and emphasize akinteic solutions.

Thus, especially in tactical terms, we must expect that the vital cultural readiness training should actually emphasize the pedagogic curriculum of those we expect to operate 'on the ground' in whatever cultural circumstance our forces find themselves in. Arguably, cultural sensitivity should be both a basic training component and, where possible, a potential selection factor for admission into the forces and the associated cadre of civilian operators. Thus, this provides us with a potential road-map in which lower level ranks, who are expected to interact directly and intimately with indigenous populations and their component cultures, will require extensive training in cultural readiness. In contrast, upper levels of the military and associated civilian agencies will need to focus much more on strategic aspects of cultural readiness and it is to these loner term issues that we now turn.

5.3. Strategies and Cultural Operations

If the people on the ground are going to be engaged in the close day-to-day contact with the local populous, what are the higher levels of command going to be doing. I suggest here that we can take a leaf out of the book of human factors which always emphasizes "*fitting the task to the man*." Here, I think upper levels of affected organizations will be much more involved with micro-selection and support of particular personnel. In general, we still treat individuals within organizations as relatively impersonal 'units' to be manipulated. This is to be expected since this is how individuals are treated, by-and-large, within all large-scale organizations. However, it is my contention here that the age of 'individuation' is upon us (Hancock, 2003a). In the past, limitations upon

computational capacity has meant that people were treated according to the expected mean value of any dimension that was under consideration. This was a reasonable strategy at that time when dealing with individual per se, was beyond the scope of feasible processing. But now things are very different. It is quite feasible to have a direct profile of each and every individual that one deals with, both in terms of the military and civilian personnel of our own country and, to a degree, those of the individuals with whom we expect to directly interact. Thus, the role of those involved in strategy will be in directly matching individuals to their cultural tasks. Indeed, if this trend continues we shall be able to directly manage particular person-to-person interaction. By this I mean that if we have knowledge that a particular individual has enjoyed success in previously meeting with another individual or small group, subsequent interaction on differing topics can be facilitated and engaged. In the same way that we now operate and target particular weapon systems for particular tasks, we will look to manage particular individuals for particular cultural interactive circumstances.

Much of this activity will be about information management. In general, we will look to cultural success to result in a form of hybrid exchange in which we seek to assimilate aspects of other cultures into our interactions while still looking to inject our own cultural perspectives into those same interchanges. Success will be formed not by the 'scorched-earth' domination of one grouping over another, but rather the stable and peaceful interaction between groups predicated upon a mutual understanding of their respective preferences and goals. In this, we must not only prepare to change others, we must look to be willing to change ourselves. Thus, flexibility and openness to ambiguity, uncertainty and change will be important issues in the strategic development of cultural readiness. Further, in the information management aspect of the strategy of cultural awareness we will also have to be particularly sensitive to our own indigenous range of cultural perspectives already resident within our

own Society. It may well turn out that the polyglot nature of our own society is one of the great advantages that we in the United States possess.

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6. Summary and Conclusions

The initial framework that we have advocated here is founded upon the fundamental tenets of individualized, information-processing psychology. We are indeed very aware of the potential shortfalls of such a strategy, especially the issue and concern for 'emergent' properties that pertain when the mass action of multiple individuals proves to be greater than the sum of their individual parts. Since, for our present inquiry, the entities at hand are complicated human beings, and since their mass action results in social effects which are framed by cultural constraints, the opportunity for this 'emergence' are legion and we accept that there will be have to numerous, additional efforts to engage in using other levels of analysis. However, from this individualistic level, we have distilled the various axes which we have initially considered of most relevance. We are happy to acknowledge and indeed anticipate that this initial framework will evolve as our data are derived from the results of the survey instrument are accumulated and synthesized.

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7. Future Directions

From the assemblage of what we have presented, we have derived numerous avenues and directions for future effort. In what follows, we present a series of these observations (largely in bullet form) for our mutual consideration as our collective project progresses. They are not presently given in any rank ordering of importance and at the present should each be considered off equivalent weight until future priority deliberations are undertaken.

- What is certainly required is a longitudinal study of perceptual and attitude change of military personnel to this issue over time.

- While the present work is directed toward a foundation of a baseline of attitude, we will need to examine attitude change in association with career performance and promotion record across successive measurement epochs.

- We will need more precise identification of cultural typologies and their geographical and geo-political distribution.

- We will need to engage in multiple, pair-wise comparisons across specific culture characters. This will obviously begin with the primary comparator being our own culture but this will have to be expanded to cross-comparisons beyond European-origin cultures.

- We will need to identify and provide and extensive evaluation of drivers of cultural evolution.

- We need a number of case-specific examinations of zones of cultural conflict as compared to zones of cultural confluence.

- We need to investigate the developmental aspects of cultural development from conception to maturation. This, in and of itself, is a vast undertaking. However, it may very well be that the learning and assimilation phases of child development are the most crucial for cultural affiliation and influence.

- We will need to examine the genesis of cultural identification and the assimilation and impact of culture during the maturation process.

- We will need to examine the influence of cultural identification across the lifespan, especially the later years of life.

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